

ABSTRACT OF THE DISCLOSURE

An optical coupling assembly for coupling an output from a first optical fiber bundle to a second optical fiber bundle, where the two optical fiber bundles are moving relative to one another, and without any physical contact or electronic components being required to effect the optical coupling therebetween. A first annular member receives an input optical fiber bundle and presents outermost ends of the individual optical fibers of the first bundle in a circular arrangement that forms a first face portion. A second annular coupling member receives the outermost ends of a second optical fiber bundle that presents the outermost ends in a circular arrangement to form a second face portion. The coupling members are supported in longitudinal alignment with one another such that the two face portions are in facing relationship. Optical signals are coupled from the first coupling member to the second coupling member without any external electronics or associated circuitry being required to affect the optical coupling. This enables an optical coupling to be effected between a stationary optical fiber bundle and a moving optical fiber bundle when the two optical fiber bundles are arranged around one or more shaft portions that prevent the area occupied by the shaft portion(s) to be used to effect an optical coupling.